

Date: Wed, 10 Mar 93 20:33:13 PST
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #300
To: Info-Hams

Info-Hams Digest Wed, 10 Mar 93 Volume 93 : Issue 300

Today's Topics:

[QUESTION] Free Internet access for Ham Radio Operators?
Dec 92 QST Labnotes
Flexible 2m 1/4 wave antenna
FT530 owners... DC plug? (2 msgs)
Ham Radio Outlet incident
OPDX Bulletin #102 - 9 March 1993
Receiver Sensitivity figures
Resistor Drift
Speaking your mind
When is the Dayton Hamvention?

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 10 Mar 93 19:47:20 GMT
From: mvb.saic.com!unogate!news.service.uci.edu!usc!howland.reston.ans.net!gatech!
pitt.edu!achr.pharm.pitt.edu!user@network.UCSD.EDU
Subject: [QUESTION] Free Internet access for Ham Radio Operators?
To: info-hams@ucsd.edu

In article <znr731615595k@slic>, mikey@slic.cts.com (Mike Shirley) wrote:

>

>

> In article <1993Mar7.061549.19585@ariel.ec.usf.edu> frank@eggo.csee.usf.edu
writes:

>

> > My uncle heard a rumor that Ham Radio Operators can get free access to the

> > Internet somehow. He didn't have any more details than that but he asked me
> > check around for him. I guess it would have to be some kind of network where
> > he could dial up and then connect from there. This was access via modem that
> > he was talking about, not packet radio.
>

My father-in-law is a Ham. He send's E-mail to me on the Internet by using
a service
called Lifenet. Lifenet is NASA sponsored (I think) and they will give out
free accounts
on their computer to anyone that is somehow related to the health sciences
(I think).
You can get to their computer by modem from most cities with a local phone
call or
from the internet by telnet. They do not have access by ham radio. Once
in you
can send/recieve E-mail to internet addresses telnet and FTP and other fun
stuff.
Their phone # is 713-480-5939

Stewart N. Abramson
Assistant Professor
Department of Pharmacology
University of Pittsburgh

sna@prophet.pharm.pitt.edu

Date: 9 Mar 93 11:10:27 EST
From: sun-barr!cs.utexas.edu!zaphod.mps.ohio-state.edu!rpi!sarah!cook!psinntp!
psinntp!arrl.org@ames.arpa
Subject: Dec 92 QST Labnotes
To: info-hams@ucsd.edu

I wonder how many people couldn't follow the column
I wrote when I got into SWR and feedline losses.

The scenario is a beginner (he is asking questions, after
all) setting up a 20 meter dipole that has a 4:1 SWR.
Then, he trims it so that the SWR comes right down.

Here is where some people get lost. He now uses a tuner,
and discovers that he loses lots of signal in the 100 ft. of
feedline. I mistakenly assumed that people would realize
he is now using the antenna some other band with a very high
SWR.

According to a recent survey, the most popular amateur band is 2 meters, where one might expect to have high losses. I've gotten VUCC on 6 meters and 300+ mile 2 meter contacts with my 86 foot dipole, though not with a coax feeder :-). Good old open wire does the trick, at least when its not buried in snow :-(. The VUCC was with 4 watts, but I needed 10 watts on those 2 meter contacts.

Would you believe that people go through the trouble of figuring out the additional loss using a 4:1 SWR ?

Next, they figure it out on 10 meters! Maybe its just my luck, but I've never gotten an SWR as good as 4:1 with a full wave dipole, which is known as being a high impedance antenna.

Strange--these people seem to understand transmission line theory, but somehow have trouble following a simple story.

Is that why they don't like the stories in QST :-) :-).

BTW There is a real error in the figure--the transmission lines go between the the inductors. As it is, the inductors are effectively hooked up to open circuits.

And yes, I could have made my first contact on 20 meters, except that my best crystal was cut for 7.05 MHz. Even back then, 14.100 was not a good CW frequency.

Zack Lau KH6CP/1

Internet: zlau@arrl.org "Working" on 24 GHz SSB/CW gear
Operating Interests: 10 GHz CW/SSB/FM
US Mail: c/o ARRL Lab 80/40/20 CW
225 Main Street Station capability: QRP, 1.8 MHz to 10 GHz
Newington CT 06111 modes: CW/SSB/FM/packet
amtor/baudot
Phone (if you really have to): 203-666-1541

Date: Wed, 10 Mar 1993 19:14:39 GMT
From: elroy.jpl.nasa.gov!usc!sdd.hp.com!hpsc.it.sc.hp.com!hpuerca.atl.hp.com!
edh@ames.arpa
Subject: Flexible 2m 1/4 wave antenna
To: info-hams@ucsd.edu

In <9303092312.AA11582@netmail.microsoft.com> a-kevinp@microsoft.COM (Kevin Purcell, Rho) writes:

>Does anyone make a flexible 2m 1/4 wave antenna on a BNC plug? That is
>a non-helical, non-lossey antenna that won't break when you run it into
>solid objects.

Have you tried 19 inches of single strand wire dropping from
the center connector? And what about another < 19 inch piece
dropping down from the ring? Or is that _too_ flexible :-)

Ed Humphries -N5RCK-
Hewlett-Packard NARC Atlanta GA

Date: Wed, 10 Mar 1993 01:46:52 GMT
From: agate!howland.reston.ans.net!usc!sdd.hp.com!hpscit.sc.hp.com!hplextra!
hpcc05!hp-ptp!johns@ames.arpa
Subject: FT530 owners... DC plug?
To: info-hams@ucsd.edu

Do any of you have a source for the dc power plug used on the FT530? (or did
you all give up and pay \$20 for the DC cord??) It appears to be something like
3.5mm OD and 1.6mm ID, but I can't find a source...

73's John

* John Schubert; Hewlett Packard, ISD | The opinions contained herein *
* Sunnyvale, California | are my own, because nobody *
* INTERNET: jes@hpamsh4.hp.com | else wants them... *
* CompuServe: >INTERNET:jes@hpamsh4.hp.com| *
* Packet: KC60VN@N0ARY | "Ban low performance drivers, *
* | not high performance cars." *

Date: Wed, 10 Mar 1993 19:35:00 GMT
From: agate!howland.reston.ans.net!zaphod.mps.ohio-state.edu!sol.ctr.columbia.edu!
eff!news.oc.com!spssig.spss.com!feenix.metronet.com!marcbg@ames.arpa
Subject: FT530 owners... DC plug?
To: info-hams@ucsd.edu

In article <19130026@hp-ptp.ptp.hp.com> johns@hp-ptp.ptp.hp.com

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>Do any of you have a source for the dc power plug used on the FT530? (or did
>you all give up and pay $20 for the DC cord??) It appears to be something like
>3.5mm OD and 1.6mm ID, but I can't find a source...
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I've found a compatible plug at Radio Shack for about \$2.00

Marc Grant	Internet: marcbg@feenix.metronet.com	
POB 850472	Amateur Radio Station N5MEI	
Richardson, TX 75085	Voice/Fax: 214-231-3998	

To: info-hams@ucsd.edu

Like any store, the competency of the sales personell varies. I've had both good and bad experiences at HRO. The bad one that I can still remember was when I was shopping for a new 2 mtr HT. The salesman showed me a Yaesu 415 claiming that it was the most popular model, sold lots of 'em etc. When I tried to enter a frequency, I couldn't get it to work! He implied I was incompetent, and then he tried and he couldn't get it to work! I asked for the manual and STILL couldn't get it to work after reading the manual! He implied that not only was I incompetent, I must be pretty du if I couldn't get it to work after reading the manual! But he declined to try following the manual to see if he could get it to work.

The OWNER, on the other hand, is a great guy and really knows his stuff.

Bruce Cheney NI7M

Date: Tue, 9 Mar 1993 19:28:31 MST
From: ucsnews!sol.ctr.columbia.edu!destroyer!cs.ubc.ca!alberta!adec23!ve6mgs!
usenet@network.UCSD.EDU
Subject: OPDX Bulletin #102 - 9 March 1993
To: info-hams@ucsd.edu

The Ohio/Penn Dx PacketCluster
DX Bulletin No. 102
March 8, 1993
Editor Tedd Mirgliotta, KB8NW
Provided by BARF-80 BBS Cleveland, Ohio
Online at 216-237-8208 14400/9600/2400/1200/300 8/N/1

Thanks to the Northern Ohio Amateur Radio Society, Northern Ohio DX Association, Ohio/Penn PacketCluster Network, ARRL DX Bulletin, DXCC, JH1FDP, IK5AAX, KA1WWP, KD1F & Radio Central ARC, KE2LJ, WB3JFS, K4CEF & Southeastern Cluster Group, N8ATR, K8CH, K8JP and KC8MK for the following DX information.

1S, SPRATLY ISLAND. There is a rumor circulating, just before going to press, that suggests the big Spralty operation may be off. The reported reason is that the League will not accept the use of the 9M prefix in the disputed territory (their planned call was to be 9M0S). As of yet, this report is unsubstantiated and no mention of it was made in the current ARRL DX Bulletin. Tim (KJ4VH) spoke with Bill (AA6TT), one of the operators on the upcoming Spratly trip and he stated in no uncertain terms, that the Spratly operation has been "pre-approved" by the League and unless something has changed VERY recently, all should be GO...."

3Y, BOUVET ISLAND. A few weeks ago, OPDX reported a rumor that mentioned a Russian explorer, Fedor Konyukhov, would be traveling to a few islands one of them being Bouvet. According to the ARRL DX Bulletin, there seems to be some truth to the rumor. A Norwegian PTT worker, LA2QM, reported that Fedor does have a valid license and permission to land on Bouvet. As mentioned early, the operation is slated for April/May, with the callsign of 3Y/R0L. Landing on this island may be a hazardous task considering that it will be in the middle of the Antarctic winter season.

60, SOMALI. Nick (G3K0X) has been very active on CW especially on the WARC bands signing 60/G3K0X. He has been very regular on 30 meters starting around 2000z. On 12 and 17 meters, check around 1330z.

FR/T, TROMELIN. There is a rumor circulating that FR5ZU will be active for 15 days sometime in April.

FW AND T2, WALLIS & FUTUNA ISLAND AND TUVALU. JF1WQC will be active from these two islands in late March. Look for T20WQ March 20th to 23rd and FW/JF1WQC March 24th to 31st. Operation will be all bands (including the WARC bands) on CW/SSB/FM. QSL via JF1WQC.

KH5K AND KH5, KINGMAN REEF AND PALMYRA ISLAND (UPDATE). By the time you read this N9NS/KH5K will be up and operating. The Pacific area is still experiencing higher than normal waves (much like what the AH1A group experienced). Supposedly one group left Honolulu the evening of March 3rd or the morning of the 4th. The remainder of the group will wait for the second boat (the "Machias", AH1A boat) to arrive in port. While waiting the group has tried to extend vacations, re-arrange return flights and test gear and antennas. Mike (N9NS) has stated, "Things have changed several times while trying to work out optional arrangements."

There were a few N9NS/KH5K spots reported on the Ohio/Penn Network, March 5th on 15 meters CW, but it was likely the work of a SLIM. The beam heading was reportedly North from the U.S.

TI9, COCOS ISLAND. Jose (TI2JJP) mentioned that a group and himself will activate this island the first week of April. There will be more information published as it becomes available. QSL via TI2AOC. Jose also mentioned that the QSLs for the November 1992 DXpedition are coming out. He sent 550 QSLs out the last week of February. Since he plans to send more cards out, Jose stresses to wait one more week for them to come in the mail. If you have not received anything in a couple of weeks, let him know if you hear him on the air. Usually he can be found on 3796 kHz beginning around 0300z.

V6, MICRONESIA. Mary Fox (V63MF) will be on Woleai Atoll (IOTA OC-132) for the next 2 years. She enjoyed a career in education in Long Island, New York, but currently she is a new Peace Corps volunteer doing teacher training on Woleai under the auspices of the Yap State Dept. of Education and the University of Guam. Her equipment is a TS450 using a G5RV antenna. Mary went from no license to Extra in under 90 days. She has been active on the IOTA Pacific Net weekends around 2000z on 21260 kHz. Mary is being sponsored by the Radio Central ARC from Long Island, New York. QSL to KD1F.

SATELLITE ACTIVITY. The following were reported by Sergio (IK5AAX):
9M2FL 145942/0905z, A22BW 145910/1714z, FR5DN 145912/1641z, N8GHU/HH5
JG1RMB/JD1 (Minami Torishima) 145927/1514z, 145885/2253z, XX9AJ
145909/1444z and YB1CS 145805/1544z.

DXCC RULE CHANGE. The next edition of the DXCC Rules will have a change under SECTION I. 1) (k) "Satellite: Contacts must be made using satellites

since March 1, 1965. Confirmations must indicate satellite QSO." The phrase, "since split frequency (eg 145/432) indication is not sufficient", will be deleted.

DXCC BACKLOG UPDATE. In a DXCC News Release dated March 2, 1993, the DXCC Desk announced that the backlog of unprocessed applications at the end of February was 1,686 (132,619 QSLs), compared to 2,460 (172,154 QSLs) at the end of January. Applications being sent out at the end of February were received 14 to 21 weeks (3.3 to 4.9 months) earlier.

CHANGES IN FIELD CHECKING OF CARDS. The ARRL DXCC Field Representatives were notified of a few changes in checking of QSL cards. All former Soviet Republics have been removed from the Field Reps checking list. These are all of the former "U" prefixes. The reason is all the republics have undergone at least two major callsign revisions and are expected to under go another major revision within the year. The good news is that they have added new countries to the Field Reps check list. The Reps can now check cards from: Malawi (7Q), Crozet Island (FT8W), Kerguelen Islands (FT8X), Amsterdam & St. Paul Islands (FT8Z), Banaba Island (T33), Mellish Reef (VK9M), South Georgia Island (VP8, LU), South Orkney Islands (VP8, LU), South Sandwich Islands (VP8, LU), Andaman & Nicobar Islands (VU), Laccadive Islands (VU), Niue (ZK2) and Prince Edward & Marion Islands (ZS8). Field checking is still limited to first time DXCC applicant, but an expansion later this year will be for any new DXCC award. An expansion for endorsements may happen next year.

FAX YOUR DX INFORMATION NOW! Faxing is available Monday/Wednesday/Friday from 0430 to 2330z only. The number is 216-237-8208 and operates only Class 2 Fax. Use only the dates and times specified. The FAX card is sharing the same phone line as BARF-80 BBS using a data/fax/phone switch.

Excerpts and distribution of The OPDX Bulletin are granted as long as OPDX/BARF80 receive credit. To contribute DX info, call BARF-80 BBS online at 216-237-8208 14400/9600/2400/1200/300 and leave a message with the Sysop or send InterNet Mail to: aq474@cleveland.freenet.edu or send BitNet Mail to: aq474@cleveland.freenet@cunyvms or send PRODIGY Mail to: DFJH48A or send a message via packet to KB8NW @ WA8BXN.OH.USA.NA

--

Jim Reisert	Internet: reisert@mast.enet.dec.com
Digital Equipment Corp.	UUCP: ...decwrl!mast.enet.dec.com!reisert
146 Main Street - ML03-6/C9	Voice: 508-493-5747
Maynard, MA 01754	FAX: 508-493-0395

Date: Wed, 10 Mar 1993 12:56:43 CST

From: agate!howland.reston.ans.net!zaphod.mps.ohio-state.edu!news.acns.nwu.edu!

uicvm.uic.edu!u12566@ames.arpa
Subject: Receiver Sensitivity figures
To: info-hams@ucsd.edu

I'm looking at specs for a NRD-535 receiver. Sensitivity is quoted in dBu, but I (being old fashioned!) am used to microvolt figures. How do I make the conversion?

eg am sensitivity is rated at 6 dBu in 1.6-30 MHz range. (I am adaptable enough to translate cycles to Hertz)

Date: 10 Mar 93 20:10:01 GMT
From: news-mail-gateway@ucsd.edu
Subject: Resistor Drift
To: info-hams@ucsd.edu

A recent posting from Jim Lockwood on the "boatanchors" newsgroup, discussing "disaster radios" (the old Hallicrafters xcvr line, colorfully named after natural disasters) included the following:

>
>+
>+ My RIT circuit is off center too, though not as bad as yours. I looked through
>+ my service manual and there is no adjustment for the RIT for centering.
>+ The RIT control is a pot, so I guess you could put a trimmer in series with
>+ the main RIT control, hide it inside the rig and adjust for center that way.
>
>Sounds to me like there is a carbon comp resistor somewhere in the circuit
>that has changed value in my Tornado.

...discussion of disaster radios deleted....

>Jim - KM6NK

My contribution:

On page 29 of the March '93 issue of Test and Measurement World is a good column by contributing tech editor Brad Thompson on the subject of drift in carbon composition resistors, common parts in older gear.

The gist of the column is that these components tend to drift UP in value with age, and can increase further after soldering. The author postulates that elevated humidity and temperature environments increase the degradation, and that 1/4 watt parts between 10 and 100 ohms are more susceptible than 1/2 watters and the higher valued parts. He concludes with the general recommendation to store components in a

dry environment.

I would add that while we all know to keep our operating equipment dry, Brad's finding should be kept in mind when troubleshooting an old rig that may have been stored under damp conditions for many years - suspect low value carbon comps that may now be somewhat out of spec but not failed.

This information is probably not news to the electronic materials, reliability, or design engineers out there. However, some discussion of material/component properties from some of the experts out there (I'm not one of them!) may be useful to many readers. What component technologies have come and gone (besides the obvious vac tube/discrete transistor/IC/? evolution), what are their applications, what happens to them as they age, and how can this info help the average Joe with troubleshooting, kit or scratch building projects, etc.? This discussion can include not only electronic materials but wire, insulation (what actually is fish paper?), PC boards, cabinet construction, finishes, fasteners, bulbs, anything at all that helps us to understand the physical materials which made/make up amateur radio. This sounds at first like an invitation to compile an encyclopedia on EE materials engineering, with infinite consumption of bandwidth and disk space. But if you pick a single NARROW topic or item that you really know something about (electrolytics, wire insulation types, contact cleaner types, etc.) and just say a concise bit about it, perhaps some really useful posting could develop.

Some discussion of color codes, markings, manufacturers' identifiers might also be useful to the readership. I never did understand how to interpret those two rows of colorful dots on the old square mica capacitors! At one time I could call out a resistor's value just by SIGHT (didn't even have to name the colors to myself, much less interpret them one by one; I just saw the resistor and could name its value, kind of like high speed CW), but I never caught on to that cap code.

Any interest?

BTW, Brad slipped it into his column that his investigation began while scrounging for some parts for an "amateur radio RF project". I enjoyed seeing mention of the "amateur" hobby in this "professional" forum. Tech professionals and academicians who are not themselves technical hobbyists SOMETIMES are a bit disdainful of, or even deny the validity altogether, of technical pursuits in the "amateur", i.e., non-professional, realm. As an engineer, I could never quite understand how it could be that some engineers weren't interested AT ALL in hobby radio, computers, photo, or at least, audio! I guess they prefer to leave work where it belongs! Of course, we hams all know that the proper use of technology is to advance the state of our hobby and not the other way around! Hope you realize this is meant to be humorous! No offense to anyone intended! But my hat is off to Brad for daring to mention "ham" radio in his column.

Interestingly, elsewhere in this journal (as another info-hams reader posted), a communications/amateur receiver is shown as the UUT for purposes of the article. Perhaps this journal is infiltrated with hams!

The author Brad Thompson wrote the following postscript (BTW, his project required a pair of 51 ohm, 1/4 watters):

"How do your 1/4 W, 51 ohm carbon comps measure up? If you maintain an inventory for repair or hobby projects, try measuring a few resistors and report your results to me, c/o Test & Measurement World, 275 Washington St., Newton, MA 02158, or through MCIMail at TMWTHOMPSON."

Very sorry for the long post. I hope it planted a useful seed. 73 to all.

K. Laudon WD6CZI
<klaudon@pica.army.mil>

Date: Wed, 10 Mar 1993 19:04:10 GMT
From: saimiri.primate.wisc.edu!zaphod.mps.ohio-state.edu!uwm.edu!linac!att!
cbnewsm!jeffj@ames.arpa
Subject: Speaking your mind
To: info-hams@ucsd.edu

In article <C3nMhr.8AL@feenix.metronet.com> marcbg@feenix.metronet.com (Marc Grant) writes:

>
>If we choose to air our problems about an organization, then I believe the
>owners should just take their punches and carry on, it most likely won't
>hurt their business. Besides, if they weren't so busy protecting their
>egos and actually did listen to some the things that customers were
>saying, maybe we'd all be a little happier.

Business in the USA generally takes the attitude that customers are a nessecery evil. If some store owner took exception to what I had posted here and confronted me with it. I'd tell him, one, what are you going to do about my complaint, two, where do you get the audacity to talk to me like that. I DON'T have to spend MY money here and I DON'T have to listen to any crap that you are slinging. You are taking my hard earned money and you darn well better understand that if aren't busting your tail to make me happy you won't see me or my friends in your store if I can help it. There are stores all over the US that will perfectly happy to take my money. If you think that you won't be hurt by losing me as a customer, ask Sears how it feels to lose customers, because you are treating me and probably others like they did theirs. They barely survived losing losing most of theirs and I guarentee that you won't. If the owner is

too big of an idiot to listen and he will be, there are lot's of other places to shop. As a reasonable customer I deserve excellent service and a business better darn well deliver it. Remember folks, it's OUR money and not theirs that we are spending. One more point, volunteer help is worth as much as you pay them. 73!

>Please deposit 25 cents

Make that a \$1.50. 8-)

--

Jeff Jones AB6MB		OPPOSE THE NORTH AMERICAN FREE TRADE AGREEMENT!
jeffj@seeker.mystic.com		Canada/USA Free Trade cost Canada 400,000 jobs.
Infolinc BBS 415-778-5929		Want to guess how many we'll lose to Mexico?

Date: Wed, 10 Mar 1993 19:08:27 GMT
From: mvb.saic.com!unogate!news.service.uci.edu!usc!zaphod.mps.ohio-state.edu!
news.acns.nwu.edu!casbah.acns.nwu.edu!jweiss@network.UCSD.EDU
Subject: When is the Dayton Hamvention?
To: info-hams@ucsd.edu

In article <1993Mar10.142301.2657@gallant.apple.com> Will Collier
<COLLIER@gallant.apple.com> writes:
>In article <ring.9.731607330@kelvin.jpl.nasa.gov> Warren Ring,
>ring@kelvin.jpl.nasa.gov writes:
>>When is the Dayton Hamvention?

4/23-4/25.

>>
>>How much is registration?

Approximately \$11-14 dependant on whether you buy them ahead of time
or at the door. Don't quote me on these prices.

>>
>>Is there info (like a schedule of sessions) I can get someplace?

Don't have this handy, sorry.

>
>If you don't already have hotel reservations, or some other method of
>lodging, don't bother coming (unless you don't mind wandering the

>streets). Everything is booked solid.
>

I would ignore this advice. People are always canceling reservations and openings appear all the time, especially in the week before the Hamvention starts. Call around and don't be disappointed if you don't find anything at first. Its all a matter of timing and luck. I often seen postings on packet from people looking for roomates to share reservations.

The last two years I have made reservations 10-15 days before the start and managed to stay with 5 miles both times.

Jerry WB9MRI

WB9MRI

--
Jerry S. Weiss "If you can't stand the heat, stay out of the antimatter!"
j-weiss@nwu.edu Dept. Medicine, Northwestern Univ. Medical School

Date: Wed, 10 Mar 1993 17:37:29 GMT
From: csus.edu!netcom.com!pdh@decwrl.dec.com
To: info-hams@ucsd.edu

References <112210@netnews.upenn.edu>, <1n5fv0\$ia2@agate.berkeley.edu>,
<112539@netnews.upenn.edu>s
Subject : Re: Ham only dual-bander HT?

yee@mipg.upenn.edu (Conway Yee) writes:

>3) With wide band receive (which is a bug, not a feature), there is increased
> intermod. You can hear a lot more, but you hear it badly. Why not
> simply buy a scanner if that is your heart's desire?

You could have a tunable filter in front of the front end. Didn't they used to do that with AM radios?

--
/*****\n| Phil Howard, pdh@netcom.com, KA9WGN Spell protection? "1(911)A1" |\n| "It's not broken... it's just functionally challenged" --Phil and Pete |\n/*****/

End of Info-Hams Digest V93 #300
